

XVI.—*Observations on Aulastoma heluo*.

By ROBERT TEMPLETON, Esq.

[Plate VIII.]

THE leech I am about to describe (*Aulastoma heluo*) is the common horse-leech of the north of Ireland, and may probably be more widely distributed. It may be collected in sufficient abundance two miles south of Belfast, on the moist banks of drains and wet ditches communicating with the river Blackwater between Stockman's Lane and the meadows in rear of the industrial school. It is found under stones, clumps of very coarse tangled grass or weedy masses, during the summer months; it seldom remains long in the water or pools of the ditches; when swimming it becomes lengthened out and very flat. It is gluttonously voracious, greedily gorging itself with earthworms, aquatic larvæ, small sticklebacks, and various thin-shelled *Helices*, *Planorbis*, *Limnææ*, &c. In size it reaches to  $2\frac{1}{2}$  inches in length; the body is widest behind ( $\frac{1}{2}$  inch nearly), the margin curvilinear; thence it narrows gradually to the head, which is small ( $\frac{1}{16}$  inch); the sides of the body are rounded, the dorsum slightly convex, its colour very dark olive-green, almost greenish black, the belly greyish ash-colour. There are lighter-coloured specimens, which have a tinge of brown or yellow; but these are exceptional. Selecting a model specimen, the colour appears tolerably uniform, a little lighter and brighter down the middle line of the back, and the rings, of which there are ninety-five quite distinct, are readily made out. The sexual organs are between the twenty-fifth and twenty-sixth rings and the twenty-ninth and thirtieth rings. Let a small piece of plate-glass be now placed on the back, so that the entire surface may lose the rounded form given to it by the rings, become quite flat, and no longer glisten, a very handsome arrangement of longitudinal lines is exhibited; these lines, four in number on each side of the middle of the back, have a very patchy look, are very dark, but usually a little less deeply tinted in the middle, so that each of the lines often looks distinctly double; they are interrupted at the passage from ring to ring. The innermost of these sets of four lines, enclosing a moderately narrow space running the entire length of the back, and of rather brighter hue than the rest of the dorsum, may be subdivided into nineteen definite lengths of five rings, with the same configuration over and over again repeated from head to tail. Within these five rings the first

little bit of the bounding-line, extending over two rings, is quite straight and parallel to its fellow of the opposite side ; then follows a curved portion, a nearly semicircular arch, engaging three rings, the concavity of those of opposite sides directed towards each other. The recurrence of this peculiar conformation every five rings gives a very pretty appearance to the back of the leech. The two next, or intermediate longitudinal lines, conform in a degree to this curved character of the innermost line ; not so the outermost, which, very near the margin, adapts itself to it. This line seems made up of a continuous series of minute patchy triangles, the bases towards the edge, the apices directed inwards. The narrow ledge left between the bases of these triangles and the extreme margin of the body is in some specimens tawny yellow, never, however, distinctly marked. The belly is dashed with patchy markings scattered loosely along the sides.

The eyes (ten in number) are disposed in a quasiparabolic curve conforming closely to the outline of the head and but a short distance from the margin of the head ; they are arranged in pairs upon the rings. The first pair, side by side on the first ring, are much the largest, and are a diameter and half of either eye, asunder. The second pair of eyes, of lesser size than the preceding, appear to form with them a gentle curve ; they are placed somewhat to the rear of the second ring. The third pair, lesser still, the eyes decreasing in size gradually from front to rear, are on the third ring, a slight degree behind the middle. A ring is now skipped, the fourth pair being rather in front on the fifth ring. Another ring is skipped, the fifth, last, and smallest being very minute and close to the front of the seventh ring.

The anal sucker, not large, quite round, looking downwards and backwards, gives an oblique appearance to that end of the body.

The upper lip projects over the mouth ; this latter is quite oval, and opens into the gullet, which is capable of great expansion. The folds which are described and figured by M. Moquin Tandon in the cross section of the head cannot be readily made out in the vertical section. At the extremities of the three largest of these folds is the site of three whitish caruncles ; and in front of each of these, he states, is a small jaw bearing fourteen teeth ; I have searched for these in vain. Some specimens were sent to my friend Dr. Carte, the able superintendent of the Natural-History Department of the Museum of Art and Science in Dublin ; he could find them no more than myself. He found the three whitish tubercles, but nothing bearing the slightest resemblance to jaws or teeth.

M. Moquin Tandon, in his second edition, speaking of the genus *Aulastoma*, says :—" Si je n'ai pas parlé de ces organes, quand j'ai publié la première édition de cet ouvrage, ce n'est pas, comme dit Duvernoy, parce qu'ils sont caduques, mais parce que je n'avais pas su les voir." In a note he adds, " M. de Blainville n'a pas été plus heureux que moi."

A page or two further on we find :—

" Dans l'*Aulastoma* les mâchoires sont presque parallèles, écartées et non enfoncées dans des plis de la membrane buccale ; elles paraissent portées par l'extrémité antérieure des trois plis les plus grands de l'œsophage. Ces mâchoires sont fort peu comprimées.

" On remarque aussi, sur leur bord libre, une rangée des denticules, en forme de V renversé ; mais ces saillies sont moins nombreuses, moins serrées, plus grosses, et plus obtuses que dans les *Hæmopsis* et les *Sangsues*. Chaque mâchoire présente environ quatorze denticules. On pourrait comparer ces organes aux dents molaires des animaux vertébrés." (' Monographie,' 1846, p. 91.)

This last remark, which appears to be entirely at variance with the figures given in his plate, had for me a peculiar interest, since on one occasion, when examining a decomposing specimen, I discovered three minute bodies of elongated form in the exact site, each with slight double curvature, like an italic  $\int$ , pointed at the distal extremity, open at the other, and sufficiently dense to form a bed for greenish-brown flattish bodies, fourteen in a double row, scarcely at all projecting, and smaller and rounder at the ends, but so disposed collectively as to bear a certain resemblance to the crown of a molar tooth. An exact copy of the sketch taken at the time is given at fig. 5. Often looked for, I have never seen any thing like them since.

Another and very pretty leech (*Glossiphonia sexoculata*) is to be found in the rivulets running from the Hollywood hills into Belfast Lough.

#### EXPLANATION OF PLATE VIII.

Fig. 1. *Aulastoma heluo*.

Fig. 2. The arrangement of the lines on the back.

Fig. 3. Their coalescence at the head.

Fig. 4. The configuration of the eyes.

Fig. 5. Molar teeth ?

Fig. 6. Vertical section of the head.